

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
24 June 2004 (24.06.2004)

PCT

(10) International Publication Number
WO 2004/052402 A1

(51) International Patent Classification⁷: A61K 47/34, 47/42, 48/00

(21) International Application Number: PCT/GB2003/005262

(22) International Filing Date: 2 December 2003 (02.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 0228525.2 6 December 2002 (06.12.2002) GB

(71) Applicant (for all designated States except US): CAMBRIDGE UNIVERSITY TECHNICAL SERVICES LIMITED [GB/GB]; The Old Schools, Trinity Lane, Cambridge, Cambridgeshire CB2 1TS (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): SLATER, Nigel, Kenneth, Harry [GB/GB]; Vivamer Ltd., William Gates Building, JJ Thompson Avenue, Cambridge, Cambridgeshire CB3 0FD (GB). ECCLESTON, Mark, Edward [GB/GB]; Vivamer Ltd., William Gates Building, JJ Thompson Avenue, Cambridge, Cambridgeshire GB3 0FD (GB).

(74) Agents: BRASNETT, Adrian, H. et al.; Mewburn Ellis, York House, 23 Kingsway, London, Greater London WC2B 6HP (GB).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

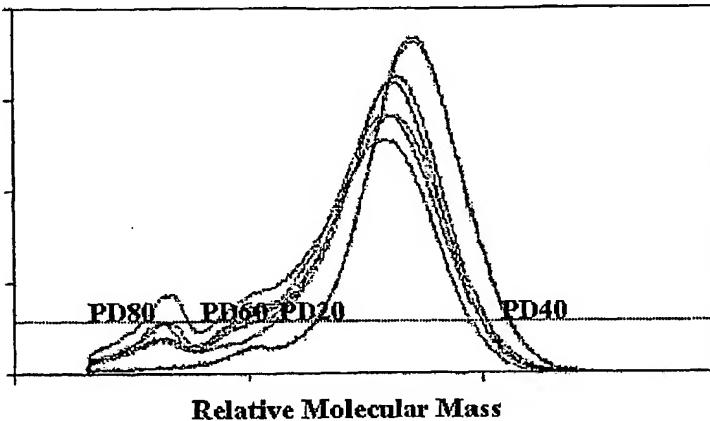
(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: HYPERCOILING POLYMERS AND THEIR USE IN CELLULAR DELIVERY



WO 2004/052402 A1

(57) Abstract: This invention pertains to certain hypercoiling polymers, and their use for the delivery of a payload into a living cell, e.g., into the nucleus of a living cell, which polymer incorporates, or is otherwise associated with, said payload. The payload may be, for example, a therapeutic payload, such as a drug, etc.; a diagnostic payload, such as a detectable label, such as a fluorophore, etc. In preferred embodiments, the hypercoiling polymers are biocompatible; biodegradable; comprise amide linkages; and/or are pseudo-proteins. The present invention also pertains to certain hypercoiling polymers; certain hypercoiling carrier polymers, which incorporate a payload; and certain hypercoiling carrier polymers, otherwise associated with a payload; which are suitable for use in such methods; and methods of diagnosis, treatment, imaging, etc., using such polymers.